

Экономико-математические модели налоговых реформ

Econometric models of tax reforms

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EVALUATION OF TAX BURDEN ADMISSIBILITY IN THE CRIMEA AND SEVASTOPOL

ABSTRACT. This paper deal with problem of formation tax burden at the regional level with the consent terms interests of the budget and taxpayers. The objective of this study is to estimate admissibility level of tax burden for economic entities of Crimea republic and Sevastopol city in transition period. Theoretical and methodological base of the research was the concept of the Laffer curve. Accordance with classification Russian regions by natural-resource potential we developed author's model of evaluation influence of tax burden on gross regional product (GRP). With model based on linear non-uniform production function. Marginal allowable values of tax burden in Crimea, Sevastopol and in the Russian regions with a similar natural-resource potential – the Krasnodar and Kamchatka regions – are calculated through the author's model. Based on received results it has been revealed that the level of tax burden in Crimea republic and Sevastopol during the occurrence of these territories to the Russian Federation a bit more, than in the Russian regions. Also it was found that tax burden in Crimea and Sevastopol in 2015 exceeds marginal allowable value from the perspective of GRP. The determined laws are explained by process of full reorganization economy of the territory of Crimean Federal District during transition under jurisdiction of the Russian Federation and, as a result, obviously low values of taxable base in comparison with the Russian regions. In process of implementation of investment projects in these regions, including integration of their economies in economic space of Russia, tax potential of areas will grow due to expansion of a production activity operating enterprises and the emergence of new enterprises. Therefore, in the long term it is possible to expect that the level of tax burden, which formed in Crimea and Sevastopol in connection with transition to the Russian tax standards, will be feasible for economic entities of these regions.

KEYWORDS. Concept of the Laffer curve, permissible tax burden, gross regional product, natural-resource potential, econometric modeling, production functions, fiscal indicators, fiscal eligibility, Free Economic Zone.

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ОЦЕНКА ДОПУСТИМОСТИ НАЛОГОВОЙ НАГРУЗКИ НА ЭКОНОМИКУ КРЫМА И СЕВАСТОПОЛЯ

АННОТАЦИЯ. В статье исследуется проблема формирования налоговой нагрузки на региональном уровне в условиях согласования интересов бюджета и налогоплательщиков. Цель статьи – оценить допустимость сложившегося в переходный период уровня налоговой нагрузки в республике Крым и г. Севастополе для хозяйствующих субъектов. Методологией исследования выступает концепция кривой Лаффера. На основе классификации российских регионов

по природно-ресурсному потенциалу разработана авторская модель оценки влияния налоговой нагрузки на валовой региональный продукт (ВРП), базирующаяся на линейной неоднородной производственной функции. С помощью указанной модели рассчитаны предельно-допустимые значения налоговой нагрузки в республике Крым, г. Севастополе и в российских регионах со схожим природно-ресурсным потенциалом — Краснодарском и Камчатском краях. На базе полученных результатов было выявлено, что уровень налоговой нагрузки в Крыму и г. Севастополе в период присоединения рассматриваемых территорий к Российской Федерации на порядок выше, чем в российских регионах. Также было установлено, что налоговая нагрузка в Крыму и Севастополе в 2015 г. превышает свое предельно-допустимое значение с позиции ВРП. Установленные закономерности объясняются процессом полной перестройки экономики территории Крымского федерального округа в период перехода под юрисдикцию РФ и, как следствие, заведомо низкими значениями налогооблагаемой базы по сравнению с российскими регионами. По мере реализации инвестиционных проектов в рассматриваемых регионах, включая интегрирование их экономик в экономическое пространство России, налоговый потенциал территорий будет расти за счет расширения производственной деятельности действующих и создания новых предприятий. Следовательно, в перспективе можно ожидать, что уровень налоговой нагрузки, сформировавшийся в Крыму и г. Севастополе в связи с переходом к российским налоговым стандартам, окажется посиленным для производителей данных регионов.

КЛЮЧЕВЫЕ СЛОВА. Концепция кривой Лаффера, допустимая налоговая нагрузка, валовой региональный продукт (ВРП), природно-ресурсный потенциал, эконометрическое моделирование, производственные функции, фискальные индикаторы, фискальная терпимость, свободная экономическая зона.

Introduction

On March 21, 2014 the President of Russia V. Putin has signed the Federal constitutional law no 6-FCL about inclusion Republic of Crimea and Sevastopol city in structure of the Russian Federation and education on their basis of the 84th and 85th territorial subjects of federation. In 2014 in these territories was determined the transition period when all tax relations were governed by the regional legislation¹. The Russian tax law has been enacted since January 1, 2015 according to the Tax Code of the Russian Federation (TC RF)².

Due to the integration of tax systems of these territories in the tax system of

Russian Federation and use of transitional provisions on application of the tax legislation by the Russian option there is a need of evaluation of the level of tax burden in these regions from a position of it's acceptability for economic entities.

I. A. Mayburov notes, that it is traditionally approved about high tax burden of the producer, however weight of real tax burden on the consumer isn't considered, but, eventually, upon purchase of production and services he should pay the vast majority of taxes: as indirect taxes, which have initially been addressed to him, and direct taxes, which addressee initially was absolutely other than him [1, p. 19].

We understand the regional tax burden (RTB) as the relation volume of the tax payments, which come to the consolidated budget of the Russian Federation from the territory of the concrete region for the certain period, to GRP of this region made for the same period [2, p. 19]. In this case the taxes and fees paid both the organizations and individuals are among tax payments. GRP, as we know, is also formed not only at the expense of profit of legal entities, but also at the expense of the income of natural persons. Therefore in this research it is

¹ The federal law of the Russian Federation from 29.11.2014 no. 377-FL «About development of the Crimean Federal District and Free Economic Zone in territories of the Republic of Crimea and the Federal City of Sevastopol»: federal law: [it is accepted State Duma RF on 21.11.2014: an edition from 31.12.2014]. Available at: http://www.consultant.ru/document/cons_doc_law_171495.

² The Tax Code of the Russian Federation: federal law: [it is accepted State Duma RF on 16.07.1998: as of February 2015]. Available at: http://www.consultant.ru/document/cons_doc_LAW_28165.

expediently to speak about admissibility of level of tax burden for all economic entities (producers and consumers).

The extent of the problem

Methodological base of the research were the concept of the Laffer curve, which shows relationship between the tax revenues and the tax burden (the aggregate average tax rate).

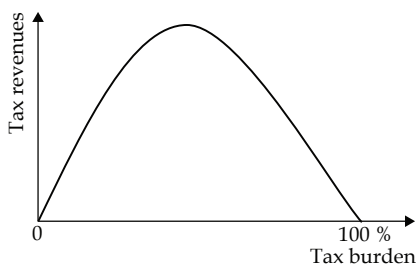


Fig. 1. The graphic image of the Laffer curve

Source: [3, p. 189]

The Figure 1 is a graphic illustration of the concept of the Laffer Curve. At a tax burden of 0 %, however, the government would collect no tax revenues, no matter how large the tax base. Likewise, at a tax burden of 100 %, the government would also collect no tax revenues because no one would be willing to work for an after-tax wage of zero – there would be no tax base. Between these two extremes there are two tax burdens that will collect the same amount of revenue: A high tax burden on a small tax base and a low tax burden on a large tax base. [4, p. 2].

The maximum point of the bell-shaped dependence reflects the amount of the tax burden, whereby tax revenues to the budget maximum.

Currently, the Laffer curve is also widely used to establish the correlation of tax burden and economic growth. It is assumed there is a certain level of tax burden, above which economic growth is replaced by recession.

D. Henderson believes that the Laffer curve has a more complicated form. Tax rate cut would not necessarily cause people to work more. If people use the higher take-home pay that they get as the result of a tax rate cut (from point A to point B

in fig. 2) to have more leisure by working less. Tax base would decrease and tax revenues could fall proportionately more than tax burden.

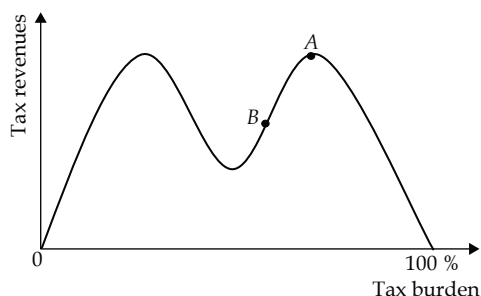


Fig. 2. The graphic image of the Laffer curve

Source: [5, p. 46]

A. Laffer excludes this possibility, arguing that the decrease in government services induced by the tax cut lowers people's real income and thus lowers their demand for leisure exactly as much as the increase in real income raises their demand for leisure. But to make his claim, he must assume, as he admits, that people spend their increased real income on goods that they value neither more nor less than the goods that the government would have bought with their money. On this basis, more complex view of the Laffer curve [5, p. 47].

Russell S. Sobel, Z. Becsi, Hugo Miguel de Oliveira Cruz Pinto de Abreu, A. Trandafir, P. Brezeanu cite various options for the shape of the Laffer [6–9].

Different models of the Laffer curve are represented in the economic literature. The most common of them in domestic practice research proposed by Russian scientists and representatives of the Georgian school of Economics, are given in table 1.

Note that Western scientists are also actively developing and testing the model tools within the concept of the Laffer curve. And, as a result quantity is considered not only total tax revenues but also the tax revenues for certain taxes: income taxes, labor taxes, property taxes, etc. The model includes a large number of factors that represent tools to the broad theoretical possibilities and the most widespread in foreign practice, are presented in table 2.

Table 1

The Laffer curve model, common in the Russian practice

Author	The time of model creation	Model view
V. G. Papava	1996–2001	$Y = -Y_0 \ln T;$ $Q = -TY_0 \ln T,$ <p>where Y – is the output (volume of gross domestic product (GRP)); Q – is the tax revenues; T – is the tax burden</p>
G. G. Loladze	2002	$Y = -Y_0 e^{\gamma t} T^{\delta} \ln T;$ $Q = -Y_0 e^{\gamma t} T^{\delta+1} \ln T,$ <p>where t – is the time period (year); δ and γ – are the evaluated parameters</p>
Y. S. Ananiashvili	2009	$Y = -Y_{pot} e^{T^{\delta}} \ln T^{\delta};$ $Y/Y_{pot} = 1 - \lambda(u - u^*);$ $Q = -Y_{pot} e^{T^{\delta+1}} \ln T^{\delta},$ <p>where Y_{pot} – is the potential GDP; u and u^* – are the actual and natural unemployment rates; δ and λ – are the evaluated parameters</p>
E. V. Balatsky	2011	$Y = mT + nT^2,$ <p>where n и m – are the evaluated parameters</p>

Source: [10, p. 39–40]

Table 2

The Laffer curve model, common in the international practice

Author	The time of model creation	Model view
<i>To calculate the total tax revenue in the budget</i>		
M. Trabandt, H. Uhlig	2011	$T_t = \tau^c_t c_t + \tau^n_t w_t n_t + \tau^k_t (d_t - \delta) k_{t-1},$ <p>where T – is the tax revenues; τ^c – is the consumption tax rate; τ^n – is the labor tax rate; τ^k – is the capital tax rate; c – is the consumption; w – is the household receives wages; n – is the hours worked; d – is the dividends; k – is the capital; δ – is the annual depreciation rate of capital; t – is the time period (year) [11, p. 307].</p>
	2012	$T = [\tau^c c / y + \tau^n (1 - \theta) / \omega + \tau^k (\theta - \delta k / y + \phi (1 - \theta)(\omega - 1) / \omega)] y,$ <p>where T – is the tax revenues; τ^c – is the consumption tax rate; τ^n – is the labor tax rate; τ^k – is the capital tax rate; y – GDP; c – is the consumption; k – is the capital; θ – is the capital share in production; ω – is the gross markup; δ – is the annual depreciation rate of capital; ϕ – is the share of profits subject to capital taxes [12, p. 9].</p>
<i>To calculate the revenues for certain taxes</i>		
Charles L. Ballard, Don Fullerton, John B. Shoven, John Whalley	1985	$\partial T / \partial t = wL[1 + \partial L / \partial t^* t / L + \partial w / \partial t^* t / w],$ <p>where T – is the gross labor income tax revenue, t – is the gross labor income tax rate, L – is the labor, w – is the wages [3, p. 193]</p>
Hugo Miguel de Oliveira, Cruz Pinto de Abreu i, Elísio Fernando Moreira Brandão ii, Samuel Cruz Alves Pereira	2014	$PTREV = \beta_0 + \beta_1 WPTRATE + \beta_2 PP + \beta_3 UNEMP + \beta_4 REL + \beta_5 AREVAL + \beta_6 YEAR,$ <p>where $PTREV$ – is the property tax revenue; $WPTRATE$ – is the weighted property tax rate; PP – is the purchasing power; $UNEMP$ – is the unemployment rate; REL – is the amount of real estate loans; $AREVAL$ – is the average real estate value; $YEAR$ – is the time period; $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ – are the evaluated parameters [8, p. 15]</p>
P. Yakovlev, K. Nur-Tegin	2015	$CIT = \alpha + CIT_{rate}^2 + CIT_{rate} + GDP + u + v + \varepsilon,$ <p>where CIT – is the corporate income tax revenue; CIT_{rate} – is the corporate income tax rate; u, v – are the fixed effects to control for omitted factors; ε – random disturbance [13, p. 11]</p>

Despite the variety of models, so far there is no effective assessment tools points of the Laffer for the sub-Federal level, which would take into account the specifics of economic development of Russian regions.

The above suggests us to create an econometric model to assess the permissibility of tax burden in subjects of the Russian Federation.

Modeling the Impact of Taxes on Economic Growth with Regional Resource Potential

At present the most widely applicable in the Russian practice of economic studies the impact of tax burden on economic growth is the static three-factor model proposed by Balatsky [14, p. 89].

$$Y = yDL^{(a+bT)T}K^{(c+dT)T}; \quad (1)$$

$$Q = yTDL^{(a+bT)T}K^{(c+dT)T}, \quad (2)$$

where Y – is the output (volume of gross domestic product (GDP)) (million rubles); Q – is the tax revenues (amount of taxes, fees, and other mandatory payments to the consolidated budget of the Russian Federation) (million rubles); K – is the capital (volume of fixed assets in the economy) (million rubles); L – is the labor (number of employed workers in the economy) (thousand persons); T – is the tax burden (%); D – is the trend operator (function, time-dependent t); y , a , b , c and d – are the parameters evaluated statistically based on retrospective time series.

However this model has a number of disadvantages revealed by us among which there is a complexity of calculations, lack of the accounting of regional specifics, mathematical inaccuracies and rather small model scope [10, pp. 146–147].

Therefore, in systematizing the most widespread of the production functions in the economic literature and determining the range of application for each of them, we propose to use a non-homogeneous linear three-factor production function as the basis of our model to explain the interaction of the tax burden and GRP.

Using the classification of natural resources by origin of A. A. Mintz, we have

divided regions of Russia into the territories with rich mineral resources, land (soil) resources, forest (wood) resources, water (river) resources and water biological resources [15, p. 777].

In the simulation function of output for each group of regions the factor of a certain type of natural resources is as necessary as the factors of labor and capital.

The impact of the other factors is expressed through the productivity of the three abovementioned resources and remains quite stable for long periods of time.

Therefore for each group of regions the indicator acts as the third factor of model: for the regions rich with mineral resources – the gross value of the mineral resource base, for land regions – the area of agricultural land, for forest regions – the total timber, for water regions – the annual river flow, for the regions most provided with water biological resources – the volume of production of water biological resources.

The Autonomous Republic of Crimea is classified as a land region. Make of the total area of lands of the republic about 71 % is farmlands from which 97 % are the share of agricultural grounds. This fact testifies to the high level of familiarity of lands.

The Federal City of Sevastopol traditionally was the largest center of the fishing and fish processing industry of Ukraine. Within decades Sevastopol for 70 % provided the market of Ukraine with fish resources. Now Sevastopol still remains the leader in volumes of production of water biological resources in the Azov-black sea basin [16].

Thus, our proposed model of the impact of the tax burden on GRP for Republic of Crimea is as follows [10, p. 124]:

$$Y_r = (a + bT_r)T_rL_r + (c + dT_r)T_rK_r + (m + nT_r)T_rG_r + B; \quad (3)$$

$$Q_r = (a + bT_r)T_r^2L_r + (c + dT_r)T_r^2K_r + (m + nT_r)T_r^2G_r + BT_r, \quad (4)$$

where Y_r – is the output (volume of GRP) (million rubles); Q_r – is the tax revenues (amount of taxes, fees, and other mandatory payments to the consolidated budget

of the Russian Federation from the territory of a particular region) (million rubles); K_r – is the capital (volume of fixed assets in the regional economy) (million rubles); L_r – is the labor (number of employed workers in the regional economy) (thousand persons); G_r – is the land resources (area of agricultural land) (thousand hectares); T_r – is the RTB (%); a, b, c, d, m, n, B – are the parameters evaluated statistically based on retrospective time series.

Author's model for Sevastopol city is as follows:

$$Y_r = (a + bT_r)T_rL_r + (c + dT_r)T_rK_r + (m + nT_r)T_rBi_r + B; \quad (5)$$

$$Q_r = (a + bT_r)T_r^2L_r + (c + dT_r)T_r^2K_r + (m + nT_r)T_r^2Bi_r + BT_r, \quad (6)$$

where Bi_r – is the water biological resources (the volume of production of water biological resources).

In assessing the impact of the tax burden on economic growth, our main task is to determine the Laffer points (fiscal indicators).

The Laffer point of the first kind refers to the limit of the tax burden in which the economy doesn't enter recession, but also isn't characterized by growth. This point is considered marginal permissible tax burden in relation to GRP.

The formula for calculating the Laffer point of the first kind of Function (3) has the form [10, p. 125]:

$$T^* = \frac{aL_r + cK_r + G_r}{2(bL_r + dK_r + nG_r)}. \quad (7)$$

The Laffer point of the second kind indicates the amount of the tax burden, beyond which not only volume of GRP, but also the value of tax revenue begins to decline. This fiscal indicator Function (4) is determined by the following formula [10, p. 126]:

$$T^{**} = \pm \frac{\sqrt{(aL_r + cK_r + mG_r)^2 - 3(bL_r + dK_r + nG_r)B} - (aL_r + cK_r + mG_r)}{3(bL_r + dK_r + nG_r)}. \quad (8)$$

The Laffer point of the second kind is the maximum point from two fixed points, calculated in accordance with Eq. (8).

Similarly, we determine the Laffer point for the models (5)–(6).

Evaluation of influence of tax burden on GRP of the Crimea and Sevastopol

Dependence (3)–(4) and (5)–(6), constructed for economies Crimea and Sevastopol on an interval of 2003–2015 are adequate to data as take all main statistical tests.

Dynamics of fiscal indicators in Crimea's and Sevastopol's economies for 2003–2015 is shown in Fig. 3–4.

In our opinion, influence of tax burden of economy is shown through four main regularities: the gap size between Laffer points («fiscal gap»); the stability of Laffer points; the dynamics of Laffer points; the relative position of fiscal indicators (Laffer points and actual tax burden).

Table 3

Parameters of the econometric models for economies Crimea and Sevastopol on an interval of 2003–2015

Regions	Activities	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>m</i>	<i>n</i>	<i>B</i>
Crimea	Value of a quantity	-386,61	2 326,87	4,58	-19,39	176,72	-961,80	-4 116,22
	<i>t</i> -statistics	-0,69	0,59	1,47	-1,18	0,56	-0,51	-0,26
	Statistical parameters	$R^2 = 0,955; F = 21,90; DW = 1,00; E = 6,31; N = 14$						
Sevastopol	Value of a quantity	508,93	-2 512,44	-1,85	0,77	-0,53	3,08	1 136,39
	<i>t</i> -statistics	2,75	-2,54	-0,38	0,03	-2,92	3,03	0,82
	Statistical parameters	$R^2 = 0,900; F = 9,02; DW = 2,39; E = 2,43; N = 14$						

Calculated by the author based on the data of the Federal tax service of the Russian Federation, the Federal state statistics service of the Russian Federation, the State fiscal service of Ukraine, the Federal state statistics service in the Republic of Crimea.

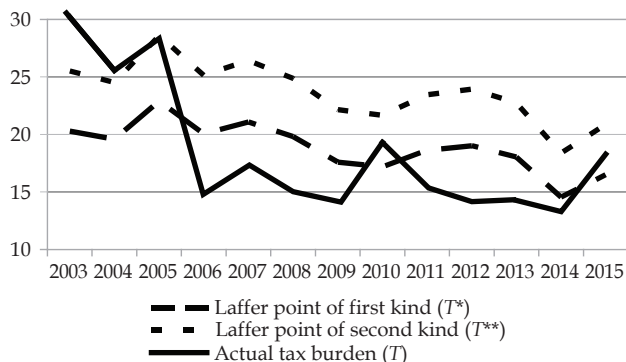


Fig. 3. Dynamics of fiscal indicators in Crimea's economy for 2003–2015

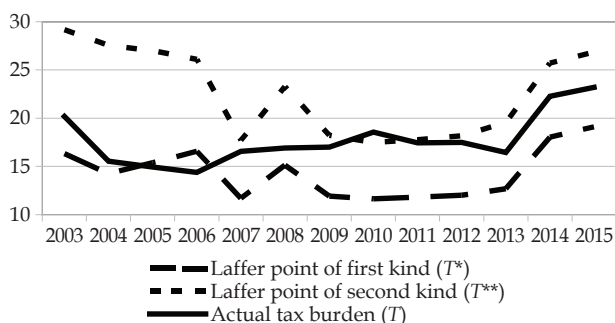


Fig. 4. Dynamics of fiscal indicators in Sevastopol's economy for 2003–2015

From results of calculations clear, that «fiscal gap» between Laffer points for economy of Crimea was equal to about 4,85 %, for economy of Sevastopol – 8,31 %, at the same time Laffer point of the second kind all the time was significantly higher than Laffer point of the first kind. Substantially it means that at essential increase of level of tax burden in these regions, undoubtedly, the serious blow to growth rates of GRP will be struck, but the budgetary tax income in a short-term outlook all the same will increase. Reduction of the tax income of the budget will happen after several years.

It should be noted that in the studied regions high instability of Laffer points was observed. So, values of the Laffer point of the first kind, calculated for economy of Crimea, lie in the range 14,55–22,89 % (for economy of Sevastopol – in the range of 11,64–19,10 %), that corresponds to a variation of 8,34 % (for Sevastopol – 7,46 %), and values of

Laffer point of the second kind – in the range of 18,38–28,60 % (for Sevastopol – in the range of 17,49–29,17 %), that corresponds to a variation of 10,22 % (for Sevastopol – 11,68%). At the same time values of the actual tax burden covered wider area – 13,29–30,22 % (for Sevastopol – 14,38–23,20 %), that corresponds to a variation of 16,93 % (for Sevastopol – 8,82 %). From here the habitual construction of an economic mechanism follows: the state at implementation of a tax policy is guided by behavior of economic entities.

For economy of Crimea Republic is well looked through a tendency of a gradual reduction of Laffer points (on average for 4 %). It demonstrates decrease in fiscal eligibility of economic entities of the region against simultaneous reduction of «reliability» of tax revenues from the territory of the Crimea. Laffer points calculated for Sevastopol's economy have no stable dynamics.

The fiscal eligibility in this paper is understood as the level of tax withdrawals expected by economic entities and feasible for them now.

It is necessary to pay attention, that a relative position of fiscal indicators in Crimea Republic during the analyzed period was different. So, for example, in 2003–2004 the actual tax burden exceeded Laffer point of the second kind, reducing the tax income of the consolidated budget of the country. In 2005, 2010, 2015 the actual tax burden settled down between Laffer points, containing growth of GRP. In the rest of the time the actual tax burden was placed below Laffer point of the first kind, exerting the stimulating impact on production in the region.

The actual tax burden in Sevastopol had the general tendency to increase and during almost all studied time interval settled down between Laffer points, exerting negative impact on business activity of economic subjects.

In Fig. 1 and 2 it is visible, that the tax burden of Crimea Republic and Sevastopol City significantly has increased and has exceeded the marginal permissible tax burden in relation to GRP (Laffer point of the first kind) by 2015.

Interpretation of the received results

As A. I. Pogorletsky notes, the level of tax burden in Russia corresponds to the average for the Organization for Economic Cooperation and Development (OECD) countries or is even lower, except the taxation of raw material sectors of the economy. In addition, Russian practice of tax administration is most remarkable for its simplicity, benevolence to taxpayers, and efficiency from the point of view of the guarantee of tax revenues to the budgets of different levels [17, p. 22].

Therefore, we have bases to hope for rather painless and rapid adaptation of economic subjects of the Crimea and Sevastopol to the Russian tax climate.

However the results of calculations presented in Fig. 1–2 show us that the taxpayers of the peninsula rather hardly is given transition to tax standards of Russia. Despite all difficulties and variety of the

held events for integration into the Russian tax system, from the territory of the Crimean Federal District (CFD) in 2014–2015 receipts of taxes and fees in regional and local budgets in the planned volumes with average rates of a gain about 30 % a year have been provided.

So, in 2015 receipts on the main budget forming payments have made: on personal income tax (PIT) – 8 billion 693 million rubles, on excises – 2 billion 416 million rubles, on income tax of the organizations – 1 billion 412 million rubles [18, p. 61].

It once again confirms our conclusions as tax burden in this regions doesn't exceed Laffer point of the second kind in 2015, tax revenues in the consolidated budget continue to increase.

According to the Federal law of the Russian Federation from 11.09.2014 no. 377-FL in the territory of CFD has been created the Free Economic Zone (FEZ) assuming the preferential mode of implementation of business and other activity, and also application of a customs procedure of a free customs area.

So, the entrepreneurs wishing to base business in the Crimea or Sevastopol will have the next 25 years an opportunity to use a wide range of advantages of the special tax modes. The status of the peninsula «Free Economic Zone» will last till 2040.

According to the legislation of Russia for the CFD are provided two types of tax and fee benefits: the benefits provided to participants of a free zone and the general benefits for all commercial economic subjects which are carrying out activity in the territory of FEZ.

The preferential mode of the taxation within FEZ for all economic entities assumes: reduction of a tax rate for patent system of the taxation to the level of 1 % at simultaneous change of the sizes of the potentially possible income (PPI) for calculation of cost of the patent; fixing of a rate for uniform agricultural tax (UAT) at the level of 0,5 %; decrease of a rates for the simplified system of the taxation (SST) to 3 % at application of object of the taxation «income» and to 7% at application of object of the taxation «the income reduced by expenses» [19, p. 2].

In addition, taxpayers of the Crimea are exempted from sanctions for violation of an order of registration of the control and cash equipment (CCE) in 2014.

The lowered rates of income tax of the organizations for participants of FEZ are also established: in the federal budget – 0 percent, in the regional budget – 2 percent – within 3 years, 6 percent – with 4th on the 8th years, 13,5 percent – since the 9th year; side tax benefits on the property tax of the organizations are entered. Besides, transport tax, land tax and property tax of natural persons taxpayers of the Republic of Crimea and Sevastopol will pay for the first time only in 2016 [19, p. 3].

Tax benefits for participants of FEZ of the Crimea and Sevastopol are given in Fig. 5.

It should be noted, that the rate on a VAT making in Ukraine 20 % in the Crimea and Sevastopol is replaced with the Russian rate equal of 18 %. A situation with a PIT for taxpayers of the Crimea in general favorable. In Russia the base rate of the PIT makes 13 %, for dividends – 13 %, for prizes and winnings, and also material benefit on loans – 35 %, for nonresidents – 30 %. In Ukraine PIT rates following: 15 % are applied in a case when the income size for reporting month doesn't exceed the tenfold size of

the minimum wage established for the beginning of financial year, 17 % – for the size of the income exceeding tenfold size of the minimum wage a month, 10 % – for certain professions, 5 % – for dividends. For citizens of the Crimea taxes on the income have decreased to the Russian 13 %, but for certain groups of natural persons who got by the Ukrainian legislation under «preferential» taxation to 10%, this rate upon has increased [21, p. 113–114].

However, despite the preferential mode of the taxation, taxpayers should give as taxes more so far, than they are capable to earn.

Most likely, unfeasible for economic entities tax burden in the Crimea, first of all, is connected with process of full reorganization of economies of the territory during transition under jurisdiction of the Russian Federation. The settled business connections have collapsed here quickly while the new relations are created slowly and hard. The first the Ukrainian and foreign banks, the IT companies, branches of international firms began to leave the Crimea. Have stopped or reduced to a minimum of investment from many countries of the world. Because of sanctions on the peninsula work of the international payment service providers, services of the Internet has stopped.

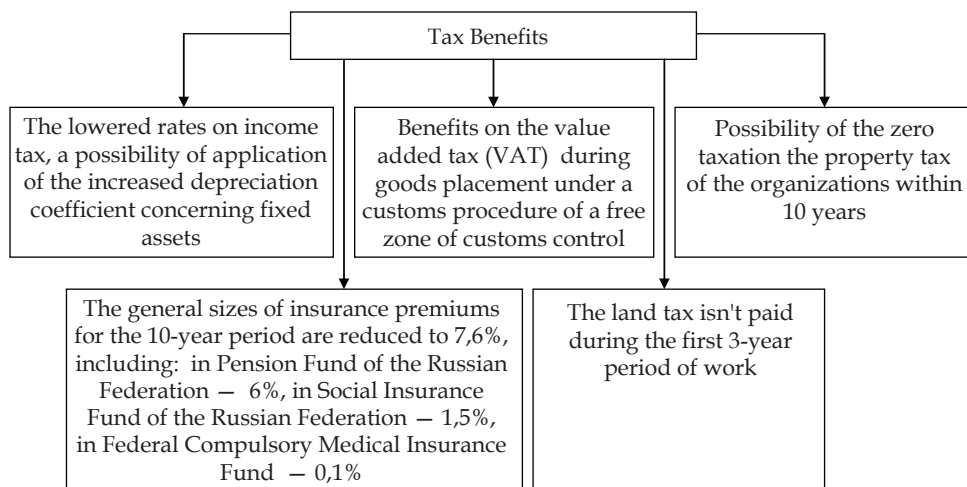


Fig. 5. Tax benefits for participants of FEZ of the Crimea and Sevastopol

Source: [20, p. 339]

Because of risk of blocking of trucks the Ukrainian food began to replace with the Russian analogs. Today the share of the Ukrainian production on counters of shops of the Crimea doesn't exceed 30 %.

Transfer of freights in the Sevastopol port has fallen to a minimum. Following the results of 2013 the Sevastopol port has processed 4,8 million tons of freights. For the first half of 2015 – about 100 thousand tons.

For the sphere of tourism also not the best times now. The number of tourists are much less, than at the time of the Ukrainian jurisdiction. It is caused by absence of through transport connection with Russia [22].

Increase of level of tax burden in the analyzed regions, in our opinion, is connected as well with effective work of tax authorities. Now in the territory of CFD the regional tax authorities which administer of earlier operating taxpayers and tax authorities of the Federal Tax Service (FTS) of Russia which according to the Tax Code of the Russian Federation exercise control of taxpayers, records about whom are entered in the Unified State Register of Legal Entities (USRLE) and the Unified State Register of Individual Entrepreneurs (USRIE), in parallel function [23, p. 8].

In addition, from 2015 in the territory of Crimea and Sevastopol were introduced new taxes, which in the tax laws of these territories didn't exist before, namely in the mineral extraction

tax (MET), special tax modes (unified imputed income tax (UIIT), the patent system of taxation), transport tax, tax on gambling (completely absent in Ukraine since 2009), property tax of the organizations.

**The comparative analysis
of admissibility of level of tax burden
in the Crimea and Sevastopol
and in the Russian regions
with a similar natural-resource potential**

We carried out the comparative analysis of level of tax burden in the considered subjects with tax burden of the Russian regions having similar natural -resource potential.

So, Krasnodar region is a largest producer of agricultural production in the Russian Federation. The most part of the territory of the region – 4708,1 thousand hectares (63,0 %) in 2015 occupy farmlands. Proceeding from it, it is expedient to make an assessment of tax burden in these territorial on the basis of model (3)–(4).

Kamchatka region during 7 years is the leader in production of water biological resources not only in the Far East, but also in the Russian Federation. Moreover, the region is the leader on production of fish production. In 2015 about 982 thousand tons of water biological resources have been caught and more than 850 thousand tons of fish production has been made. Therefore for evaluation of tax burden it is correct to use model (5)–(6).

Table 4

**Parameters of the econometric models for economies
Krasnodar and Kamchatka regions on an interval of 2003–2015**

Re- gions	Activities	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>m</i>	<i>n</i>	<i>B</i>
Kras- nodar region	Value of a quantity	-1 573,59	9 515,85	1,43	3,33	1 006,07	-6 645,53	117 613,19
	<i>t</i> -statistics	-0,48	0,53	0,37	0,11	0,60	-0,68	0,70
	Statistical parameters	$R^2 = 0,960; F = 23,81; DW = 2,06; E = 4,46; N = 14$						
Kam- chatka region	Value of a quantity	-60 371,36	349 344,08	350,08	-1 765,12	3 712,75	-19 573,15	-257 987,09
	<i>t</i> -statistics	-3,30	3,91	3,87	-3,80	1,30	-1,06	-0,69
	Statistical parameters	$R^2 = 0,947; F = 17,75; DW = 2,31; E = 12,95; N = 14$						

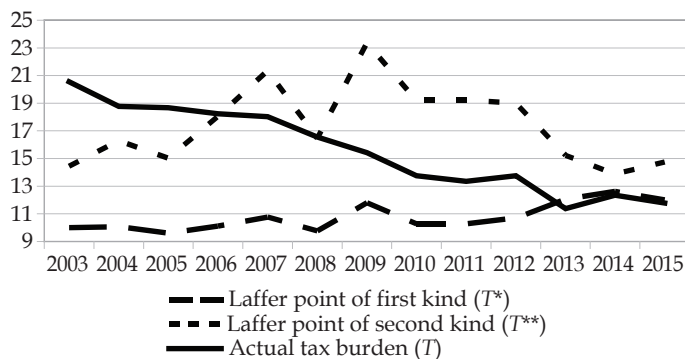


Fig. 6. Dynamics of fiscal indicators in economy of Krasnodar region for 2003–2015

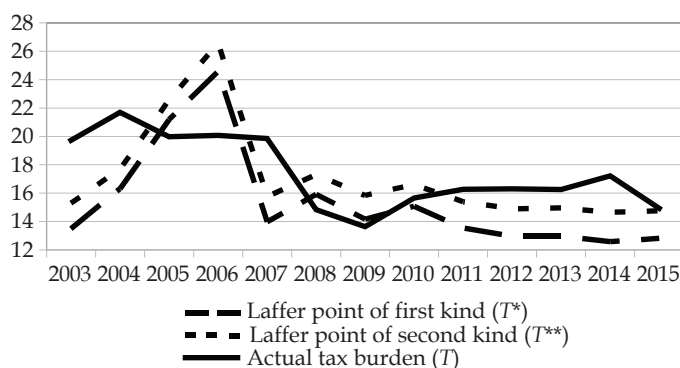


Fig. 7. Dynamics of fiscal indicators in economy of Kamchatka region for 2003–2015

The constructed dependences (3)–(4) and (5)–(6) for economies of the Krasnodar and Kamchatka regions on an interval of 2003–2015 are adequate to data as take all main statistical tests.

Dynamics of fiscal indicators in Krasnodar and Kamchatka regions for 2003–2015 is shown in Fig. 6–7.

Table 5

Values of fiscal indicators of the analyzed regions in 2015

Regions	Actual tax burden, %	Laffer point of the first kind, %
Crimea	18,29	16,50
Sevastopol	23,10	19,10
Krasnodar region	11,78	12,01
Kamchatka region	14,93	12,83

Based on comparison of values of the fiscal indicators in 2015 presented

in table 3 we have drawn the following conclusions:

First, values of the actual tax burden in Crimea and Sevastopol is much more, than in the Krasnodar and Kamchatka regions.

Secondly, in Krasnodar region the level of tax burden quite favorable for development of economy (the actual tax burden is slightly lower than Laffer point of the first kind). Liberal taxation here is connected with the agricultural orientation of economy of the region and numerous tax benefits established for agricultural producers.

Thirdly, the level of tax burden in Kamchatka region and Crimea Republic attracts reduction of GRP (the actual tax burden here exceeds Laffer point of the first kind approximately for 2 %).

Fourthly, the level of tax burden in Sevastopol City of 4 % exceeds marginal

allowable value that indicates huge pressure on economic entities from tax authorities.

High values of tax burden in new territorial subjects of the Russian Federation in comparison with values of this indicator in the Krasnodar and Kamchatka regions are explained by lack of tax potential of these territories.

So, for example, on some branches of economy on a share of the profitable organizations the economy of the peninsula of Crimea lags behind from the average Russian indicators. It belongs, first of all, to the industry, including processing branches, production and distribution of the electric power, gas and water, and also a hotel and restaurant complex of the Crimea. In this connection values of potential tax base on income tax of the organizations in comparison with other regions of the Russian Federation are low [24, p. 26].

It is necessary to pay special attention that in the Republic of Crimea and Sevastopol City lag on salary level from the average Russian level approximately by one and a half times is observed. The size of the average monthly nominal added salary in 2015 in the Republic of Crimea has made 22 464 rubles, and in Sevastopol – 24 187 rubles at the average level of a salary across the Russian Federation – 34 012 rubles. Besides, in labor market of the peninsula the part-time employment is observed: at 110 enterprises of the studied territory (the number of staff – 22 462 people), 5 491 persons (24,4 %) work in the mode of a part-time employment, from them there are 313 people (1,4 %) in holiday without preservation of a salary. Therefore the size of potential tax base on PIT in the Crimea and Sevastopol obviously below, than in other Russian regions.

For many years dominations of the Ukrainian power infrastructure, industrial, recreational and tourist complexes of the Crimea or fell into decay, or were implemented extensively without any exact strategy. Thus, at this moment the condition of economies of new subjects of the Russian Federation cardinally differs

from the all-Russian level, and elimination of this imbalance will demand a lot of work.

In addition, general structure of tax income of the budget of Crimea differs from other regions of the Russian Federation markedly. The main tax revenues are the PIT making 55 % of all income, excises – 15 % and the property tax of the organizations – 14 %. In revenues of the budget of Crimea income tax of the organizations makes only 9 % whereas in other regions it is the main profitable source of budgets [18, p. 64].

Also you shouldn't forget that tax burden in the price of goods in Ukraine traditionally was lower, than in Russia. Yu. B. Ivanov explains it with the level of social and economic development of society. So, during the periods of crises transposition of taxes on end users is complicated, and the taxpayer evades from payment by leaving in a shadow. During crisis manufacturing taxpayers of Ukraine choose alternative option – leaving in a shadow because of impossibility of transposition of the most part of taxes on consumers owing to their low purchasing power and falling of a standard of living [25, p. 81; 26]. Respectively, for many years a certain fiscal eligibility at economic entities of Ukraine was created. This level of fiscal eligibility obviously lower, than at the Russian taxpayers. Therefore during this period of time it is rather difficult for them to adapt to the new level of tax burden.

Perspective Development Directions within FEZ in the Republic of Crimea and Sevastopol City

The main sectors of the Republic of Crimea and Sevastopol are industry, agriculture and tourism. Opportunities of special economic zone lie in the development and enhancing the competitiveness of traditional industries, as well as in the emergence of new ones.

Quite promising is the development of enterprises of food industry. The emergence of vast domestic market due to accession of the peninsula is a stimulus for development of wine production. At the

same time due to remoteness of the region from the rest of Russia and the associated logistics costs, the possibility of the development of the food industry on a number of products is temporarily restricted by the internal needs of Crimea. Agriculture is a promising direction for residents of the special economic zone, as a source of raw materials for the food industry and one of the key export sectors. Chemical industry (inorganic chemistry accounts for 11 % of Crimean exports) and engineering (mainly shipbuilding – 12,5 % of exports) are rather perspective [27, p. 28].

Regarding innovative industries, the opportunities of Crimea are very low. Lack of necessary staff, educational institutions, and remoteness from the rest of the country make investments in these sectors highly risky and with long payback. Development of cargo ports is also unpromising due to lack of proper volumes of freight traffic, presence of major ports on the «mainland».

By virtue of natural and geographical conditions, touristic and recreational sector is one of the most perspectives in Crimea. In the peninsula there are many sanatoriums and hotels, but the service remained at low level. Solving geopolitical problems will help to attract not only Russian, but also foreign tourists.

In the territory of the Crimea there are great opportunities for development of networks of restaurants, amusement parks. In addition, passenger transportations by the motor transport will be in demand (taxi, bus). In view of risks of termination of air transportation to Crimea, due to possible sanctions, as well as high tickets prices, emergence of local air carrier is quite reasonable.

FEZ creation is intended to mitigate the effects of negative factors, such as reduction of volumes of domestic and foreign trade, reduction of a flow of tourists, increase in prices for food, deterioration in level of banking services and difficulties in attraction of credit resources, and also idle times in production owing to need of a re-registration of the organizations.

Conclusion

In work the main features of tax burden in the Crimea and Sevastopol during adaptation to the Russian tax system are shown. In general it is possible to claim that the level of tax burden in the analyzed subjects above marginal allowable value. Despite the preferential mode of the taxation, the enterprises of regions lack means for continuation and furthermore for expansion of the activity. The share of the earned income of economic entities which is subject to withdrawal in a type of tax for them is so high now.

It is a consequence of reorganization of Crimea's economy during transition to structure of the Russian Federation, introduction of new taxes according to the TC RF, effective administration of taxes by federal and territorial tax authorities.

In comparison with the Russian regions having the similar resource potential and, as a result, a similar main orientation of economy, the level of tax burden here is higher on average for 7–8 % here.

This divergence is connected with the insignificant tax potential of the Republic of Crimea and Sevastopol City, features of structure of the tax revenues of their budgets, and also with the level of fiscal eligibility of economic subjects, lower in comparison with the Russian regions.

Summing up the result of the conducted research, we will note that as further development of economy of the Crimea and Sevastopol and their transformation from subsidized regions into regions – donors of the federal budget is planned, public authorities need to think of the provision of economic subjects of these territories already now and to aim at creations of new productions and workplaces, at attraction of investments. Besides, it is necessary to accustom the Crimean taxpayers to pay taxes, i.e. to form tax culture among businessmen and the population. It will allow regions to acquire the tax potential and to increase a share of own sources of financing besides the help from the federal center. Thus, the strong base for implementation of tax contributions to budgets of all levels will be built.

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